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11 June 1982

# Worldwide Report

## TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 222

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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# WORLDWIDE REPORT

## TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 222

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ASIA

AUSTRALIA

## WEST EUROPE

# GOVERNMENT COMMUNICATIONS REVAMPED TO MEET NEW TECHNOLOGY

Melbourne THE AGE in English 6 Apr 82 p 5

[Article by Michael Gordon]

[Text] CANBERRA. — The Federal Government has revamped its Department of Communications in a bid to meet the impact of new technology in broadcasting, telecommunications and other areas.

The re-organisation is designed to help the Government when making decisions on such issues as the future of Telecom and Australia Post, the ABC, cable and subscription television and the national satellite system.

The Minister for Communications, Mr Sinclair, said last night that the changes were necessary to enable the department to carry out its duties efficiently "in the rapidly changing and expanding field of communications."

Mr Sinclair said that in the context of three present inquiries —into telecommunications, cable and subscription television and Australia Post—the moves would help the Government when considering technological change and its social implications.

The new department, based in Canberra, would have five divisions.

The broadcasting division, headed by Mr P. B. Westerway, would advise on the development of broadcasting policies and the planning, operation and administration of the Australian broadcasting system. It would establish technical policies and planning proposals for the development of new broadcasting services.

The communications development division under Mr R. I. Lord, woud develop and analyse policy options for the provision of future communications services, relate demand for services to potential means of supply and develop standards for the introduction of new technologies.

The corporate policy and projects division headed by Mr A. E. Guster would analyse policy issues affecting communications and undertake major projects where more than one communications system was involved and carry out the financial and administrative management of the department.

The radio frequency management division would advise on major policy issues affecting use of the radio frequency spectrum, develop policies, systems, equipment and resource plans. It would be led by Mr M. R. Ramsay.

Mr V. J. Kane would head the space, telecommunications and postal policy division which would advise on issues relating to the provision of postal, international and overseas telecommunications services.

CSO: 5500/7537

UNIONS JOIN TO OVERTURN GOVERNMENT BAN TO TELECOM VIDEOTEX

Canberra THE AUSTRALIAN in English 12 Apr 82 p 21

[Article by Nicholas Rothwell]

[Text] POWERFUL trade unions representing Telecom and Australia Post's workforce have banded together to overturn a Federal Government decision excluding Telecom from the highly profitable Videotex services market.

Videotex – a computer information system transmitted down conventional telephone lines, which can be received by standard television sets – will soon be introduced in Australia.

The new trade union alliance – named the Australian Communications Planning Group – wants Telecom to be given the licence to operate a Videotex system in Australia.

Union members are planning a national publicity campaign to protest against the decision and have mounted a drive to lobby all potential Videotex users in marginal seats currently held by coalition parties within the Federal Government.

The unions also call for Telecom and Australia Post to be defended from "the ravages of the Razor Gang".

The group – which includes the Administrative and Clerical Officers Association, the Telecommunications Employees Association, the Postal and Telecommunications Union and the Public Service Association – is sending a strongly-worded document making its case to all State and federal members of parliament.

Videotex can be used as a simple computer information bank to provide education services or business information, and as a means of transfering funds electronically.

"It appears that a few Sydney and Melbourne entrepreneurs will attempt to provide a limited Videotex service," the union group warns.

Their submission points out that Telecom has carried out research on Videotex for the past 18 months and was in a position to introduce Videotex into Australia when the Government opted to give the service to private industry.

## MODEST

"The decision, which favors certain large business groups, could mark the end of the development of a national telecommunications system where services are available to all Australians," the Australian Communications Planning Group warns.

Telecom had been planning to establish Videotex as a national network at a uniform charge throughout Australia, so that residents outside the city where the central Videotex computer would be based could have access to the system for the cost of a local call.

"Only by this policy would make the advantages of this new technology available to all at a reasoanble price," the unions point out.

The main attraction of Videotex for many of the system's potential users had been the promise of setting up a

state or nation-wide computer information service at low cost.

"But with the Government's rejection of the Telecom proposal, the likelihood of STD charges prevailing outside the capital city in which the central computer would be located has meant the abandonment of many of these potential applications," the union submission claims.

A Telecom-operated national service would increase the benefits of Videotex to industry and to consumers, while cutting the profits of the operator of the system.

The unions are distributing their statement to major industries and other potential users of the Videotex network in "key marginal electorates currently held by Liberal and National Country Party members".

Members of the Telecommunications Employees Association are undertaking the campaign in country districts while the Administrative and Clerical Officers Association handles urban electorates.

The unions are calling for potential customers to demand that Telecom be given control over the system, and to make direct appeals to their local members of parliament to give reasons for the Federal Government's decision.

CSO: 5500/7537

GOVERNMENT TOLD TELECOM PARTICIPATION VITAL TO VIDEOTEX NETWORK

Canberra THE AUSTRALIAN in English 21 Apr 82 p 20

[Text]

EXECUTIVES from competing Viewdata networks yesterday called on the Minister for Communications, Mr Sinclair, to reverse his decision excluding Telecom from the potentially lucrative Teletex services market.

Mr Tony Cohen, representing International Computers Ltd, told delegates to a seminar on Technology in the World of Travel and Tourism in Sydney that the absence of an umbrella organisation such as Telecom would cripple the fledgling industry and fragment the market.

He said standards needed to be established whereby consumers could receive information on one set of equipment via a common carrier rather than on a whole range of competing systems, as is currently the practice.

Videotex is an instant information service utilising computer, television and telephone networks to store, distribute and display information. Business houses and banks already use the limited, existing service to obtain up-to-date data on financial trends.

Under the current arrangement, Mr Cohen warned, a number of people would be "disenfranchised" by living in areas uneconomic for private enterprise.

At the same time, he said, industry growth would be slowed by a lack of public awareness about videotex capabilities. Information providers would also be reluctant to utilise it if they feared they would reach only a small number of consumers.

Mr Cohen's claims echo those made by the Australian Communications Planning Group – a trade union alliance – that Telecom is the best-equipped organisation to handle a national Teletex system.

CSO: 5500/7539

# PACKET-SWITCHING NET TO SPUR DATA COMMUNICATIONS

Melbourne THE AGE in English 6 Apr 82 p 33

[Article by Luis Garcia]

[Text]

The introduction later this year of Australia's first public packet-switching network is expected to stimulate data communications in Australia greatly, according to Telecom's communications product manager for Packet Switching Services Australia, Mr Paul Thomas.

"The availability of the Auspac network in December this year is expected to greatly stimulate data communications in this country. And we believe it will lead to more and more companies becoming interested in having their own networks," Mr Thomas said.

The introduction of Auspac, which will be run by Telecom, would encourage many companies to use, or increase their use of, data communications systems.

Many companies, once they had used Telecom's public network, might be encouraged to opt for a private network of their own.

"There are many advantages to using a private, as opposed to a public networking system, not the least being the security that your information transmission is much less likely to be interrupted by factors outside your control," Mr Thomas said.

"Many large corporations in Australia tend to claim that their biggest communications problems are in the areas of speech and text, but overseas research shows that growth in data communications will continue to increase rapidly.

"In the United States, in particular, interest in corporate data networks is enormous."

This is not necessarily the case in Australia, where only a small number of companies have expressed interest in using public data networks, let alone private systems in the past.

Packet Switching Services Australia — PSSA — is the Australian distributor of communication products from the American corporation, GTE-Telenet.

GTE-Telenet established the first public packet switching service in the US, and has been involved in similar deals in Norway, Japan, Brazil and Taiwan.

PSSA has already received its first order for a network — from the Federal Department of Business and Consumer Affairs.

PSSA's GTE-Telenet systems, according to Mr Thomas, provide the major requirements of an efficient corporate communications network: fast transit time, low cost, high transmission speed, fast response time and speedy call set-up.

Its X.25 networking facility is expected to compete with the data networks of some major established computer groups including IBM's SNA, Honeywell, Wang's Wangnet, and Digital Equipment's DECNET.

CSO: 5500/7537

# VIDEOTEX SYSTEM NOW ON DISPLAY FOR PUBLIC VIEWING

Melbourne THE AGE in English 6 Apr 82 p 34

[Text]

Amidst all the controversy and in-fighting over the future of Australia's videotex services, International Computers Limited — ICL — has taken the quiet but direct approach in showing what its own videotex system can do.

ICL is letting the public use its videotex system, with a simplified menu-type method of operation, at the Royal Easter Show this week.

A videotex system links a TV set or terminal to the telephone lines, which in turn connect the set to a central computer, allowing for two-way communications between the user and the computer's data bank.

This is the first time ICL has exhibited its videotex system to the general public. It is also probably the first time that any computer company has put up its system for public scrutiny.

ICL, in association with the Royal Agricultural Society of NSW, has installed five color video display terminals throughout the Showground, connected to an ICL ME29 computer.

Two of the terminals, one in the Ford Pavilion, and one on the counter of the Administration Building, are available for public use.

The videotex system, called the Bulletin, will enable visitors and officials to have up-to-the-minute information on the 1500 ring events taking place at the Show.

Sporting results and fixtures will also be able to be called up.

The videotex service is very simple to use, the data processing manager of the RAS, Mr Alf Gates, said.

"All the visitor has to do is select those events he or she is interested in. Bulletin will display in color a complete timetable of events and up to date results of those already completed," Mr Gates said.

CSO: 5300/7537

EDITORIAL DISCUSSES GOVERNMENT INDECISION ON TELECOM

Sydney THE SYDNEY MORNING HERALD in English 13 Apr 82 p 6

[Text] ALMOST SEVEN years after its establishment, Telecom Australia is still suffering from an identity crisis. The Federal Government can't make up its mind what it wants from Telecom. Although it was established to put the provision and operation of telecommunications services on a more business-like footing, the Government retains significant controls over its operations, including the key areas of charges, borrowings and staffing. Telecom's charter requires it to operate efficiently and economically, yet it is also expected to subsidise certain unprofitable operations from the profits (excessive profits?) it generates in other areas. The Government is hoping that the Davidson Inquiry, which is currently investigating the extent to which the private sector could be more closely involved in the provision of telecommunications services, will resolve these issues. But, since their resolution involves questions of politics, ideology and economics, this is asking a lot of Mr Davidson and his colleagues. It is little wonder that the Federal Department of Communications, the body responsible for Government policy in this area, has not made a submission to the inquiry.

With the explosion of new technologies, particularly the increasing convergence of telecommunications and other industries, most notably information processing, it is appropriate that Telecom's virtual monopoly of telecommunications should be examined. One of the justifications for Telecom's privileged position has been this expectation that it would use its profitable activities to subsidise other activities which, although unprofitable, are seen as socially desirable or necessary. The latter services include country telephones (by far, the biggest loss area), metropolitan non-business calls, telegrams and public telephones. The Government has accepted the practice of cross-subsidisation and, in the area of country telephones, has encouraged an extension of subsidies. Exposing Telecom to greater competition (which, of course, is competition only for profitable services), or a specific prohibition on Telecom entering new, highly profitable fields (as occurred with Videotex), has significant implications for Telecome's ability to cross-subsidise and, hence, for its pricing policies. So far, there is no sign that the Government is facing up to this.

Under its charter, Telecom is also required to meet at least 50 per cent of its capital investment program from internal funds. In recent years, because of Federal Government restrictions on its level of borrowings, Telecom has been funding in excess of 70 per cent of its capital expenditure from internal funds. There is nothing magical about a 50:50 ratio of reserves to borrowings although it is generally considered a prudent balance for public authorities. But a continuation of the tight restrictions on Telecom's borrowings will inevitably lead to much higher charges and long delays in the provision of services. Once again, the Government doesn't seem to be facing up to these consequences.

In its submission to the Davidson Inquiry, Telecom has thrown out a challenge to the Government. It has said, in effect, that it would welcome wider

private sector involvement in telecommunications provided that it is able to compete on equivalent terms. This would mean the Federal Government freeing it from present controls on staffing, industrial relations and other matters and giving it greater flexibility, if not complete freedom, in its borrowing requirements. There is no reason why the Government should not go all the way and put Telecom on a totally commercial basis, including a requirement to pay the equivalent of company tax. The subsidisation of unprofitable services could then be done through the Budget by specific Government decision. This would make the job of the Davidson Inquiry much easier and therefore ensure genuine public and private sector competition, with the consumer as the ultimate beneficiary.

CSO: 5500/7537

# LABOR PARTY OPPOSES MORE PRIVATE INVESTMENT IN TELECOM

Perth THE WEST AUSTRALIAN in English 15 Apr 82 p 37

[Text] Canberra--The Labor Party yesterday strongly opposed bigger involvement by private enterprise in Australia's telecommunications system.

The party's communications spokesman, Senator John Button (Vic.), told the Davidson inquiry into the telecommunications system that resources would be wasted and costs would rise if private enterprise played too big a part.

He said that there was a strong tendency to try to introduce American practices into Australian communications although they were inappropriate because of Australia's size and population.

Telecom's role would be undermined and there would be duplication of services, waste and less access to communications for some companies and people.

"It would also adversely affect Telecom's capacity to provide services at reasonable cost," Senator Button said.

He said that private interests would not operate in unprofitable areas such as in the country.

**CHARGES**

"If private firms were allowed to compete with Telecom the result almost certainly would be a substantial rise in phone and general communications charges in the more remote areas of Australia," he said.

"Technological change means that in future a single telecommunications system is likely to handle all forms of communication, including telephones, data transmission, cable television and information systems such as videotex."

Senator Button said this made it essential that the system rely on Telecom as the national carrier for all forms of communications including cable television.

"Technological changes in communications can be introduced in a way that will improve the efficiency of the communications system, provide a fair and equitable distribution of the benefits to the industries involved and promote growth in employment," he said.

"That can be done, however, only if there is sensible medium to long-term planning, rather than ad hoc decision-making and favouritism to sectional interests at the expense of the national interest."

CSO: 5500/7537

COMPUTERS WILL IMPROVE WEATHER INFORMATION SYSTEM

Melbourne THE AGE in English 6 Apr 82 p 34

[Text] Before the end of the year Melbourne should be getting more accurate longer-range weather forecasts, thanks to the installation of $5.2 million worth of new computing equipment at the Bureau of Meteorology.

It will be installed over the next six months.

The new equipment, which includes two Facom computers valued at $3.4 million, will allow the bureau to create more accurate computer models of atmosperic conditions.

With this new computing power, the bureau will be able to process data 10 to 15 times faster, according to its assistant director, computing, Mr Ross Maine.

"This will mean that our 48-hour forecasts will be as accurate as the 24-hour forecasts are today," he said.

"Plus, our 24-hour forecasts will be more reliable than they have been in the past."

The bureau's present system, an IBM 360/65, which was installed in 1968 for $4.6 million, has been producing computer weather models which are "operationally reliable" for only 24 to 36 hours.

The new computers, a Facom M180N, and a more powerful Facom M200, were chosen by the bureau because of their reliability and "value for money".

Reliability is important to the bureau, because it operates 24 hours a day, seven days a week.

"We have three shifts a day, every day," explained Mr Maine.

To prepare its weather reports, the bureau has to collect and analyse a vast store of information which floods in from all over the Australian weather region.

The region itself is enormous. It covers an area which takes in the Cocos Islands, New Zealand, New Guinea and the Southern Ocean half way to Antarctica.

More accurate weather prediction helps everyone, said Mr Maine.

"For instance, the airlines will have a significant opportunity to save fuel because wind velocity errors should be reduced by about 20 per cent, and they won't have to carry as much fuel for adverse weather conditions.

"Also someone out on the bay in a fishing boat will have earlier warning of changing conditions . . . all these things are important."

The new equipment will also improve the bureau's contribution to the World Weather Watch, a system for relaying meteorological information on a global communications network.

The new equipment also includes $1.4 million worth of integrated peripherals supplied by Computer Benefits, South Melbourne.

Other suppliers were Memorex, which received a $198,000 tape order, Datamatic and Anderson Digital Equipment.

CSO: 5500/7537

SYDNEY'S PSI WINS BID TO COMPUTERIZE HONG KONG TV STATIONS

Canberra THE AUSTRALIAN in English 20 Apr 82 p 19

[Text]

A DEAL to supply one of Hong Kong's two English language television stations, RTV 1 (Rediffusion Television), and its Chinese-language sister station, RTV 2, with a sophisticated computer has been signed by Paperwork Systems Inc (PSI), of Sydney.

The station will computerise almost all aspects of its operations, with PSI supplying hardware, software, local engineering and software support, together with staff training.

Equipment to be installed at RTV by PSI includes one of the largest Datapoint ARC (Attached Resource Computer) systems delivered in South-East Asia.

It is based on Datapoint's 8600 processors and 8220 terminals.

The standard PSI telephone diagnostic support service will also be available to the station.

Taken over in 1980 by an Australian consortium of Henry Jones (IXL), David Syme and Co and CRA, RTV operates four television stations (two English and two Chinese language).

PSI will examine all present operating procedures, recommend modifications to these, and introduce computer facilities.

With more than 45 Australian television and radio stations using its broadcast and television (BAT) systems, PSI's managing director, Mr Wayne Ruting, says he believes his company is particularly well positioned to meets RTV's needs.

He said success in gaining this contract heralded his company's expansion into other South-East Asian markets.

Initially, the implementation of the BAT system would let RTV 1 and 2 streamline their advertising sales procedures, reduce production operating costs and manage their inventory of film and video programs more efficiently.

"In advertising bookings terms, Hong Kong is one of the most competitive and demanding television marketplaces in which to work," Mr Ruting said.

CSO: 5500/7539

CONTROL DATA TO DOMINATE ENGINEERING-COMPUTER INDUSTRY

Canberra THE AUSTRALIAN in English 20 Apr 82 p 22

[Article by Claire O'Grady]

[Text] THE birth of Control Data Corp's Engineering Technology Centre (ETC) has thrust the company into the forefront of the national engineering arena.

The Melbourne centre, which aims to harness computer-aided design techniques to the engineering industry, is poised to capture a large chunk of the estimated multi-million dollar engineering/computer market.

One of the engineering specialists working at the ETC, Mr Digby Crisp, said: "Marrying computer techniques to engineering skills has remained very virgin territory for most hardware/software makers.

"This is the first time in Australia that a computer firm has gone all out to attract the engineering sector."

Mr Raphael Grzebieta, also of the ETC group, said: "The problems of engineering are becoming increasingly sophisticated, with the result that many of the old and trusted methods of engineering analysis can no longer provide sufficient depth in the required time.

"We will be looking to fill the gap for customers who lack their own resources, either because they don't have the necessary technological know-how or equipment, or because they cannot justify the expense of running their own system."

Using Control Data's Cybernet network, customised reports, plots and listings will be produced.

But the ETC, which is due to open a Sydney office soon, will also be moving into computer analysis in environmental research and manufacturing.

ETC sales manager Mr Dennis Rabin said: "If we can make the transition into this field successfully, the whole spectrum of manufacturing design will change dramatically."

Mr Crisp added: "Through the use of computers a number of different prototypes can be drawn up almost immediately and the best selected."

Mr Rabin said ETCs in Australia would adopt a unified, nationwide approach to the marketplace.

"If one centre cannot provide the solution, the question will be passed on to another set of experts at another of our centres," he said.

CSO: 5500/7539

AVIATION COMMUNICATIONS TO BENEFIT FROM SATELLITE

Canberra THE AUSTRALIAN in English 28 Apr 82 p 20

[Article by Wes Willoughby, senior assistant secretary, planning research and development, the Federal Department of Transport]

[Text]

THE proposed Australian national communications satellite system (Aussat) has received a great deal of publicity, concentrated almost entirely on its ability to bring television and radio to the remotest areas.

Yet the publicity for the system, on which a government decision is expected soon, has almost entirely overlooked the revolutionary impact the satellite will have in the transport field, particularly in aviation.

The Department of Transport could become one of the biggest users of the satellite.

To understand how the satellite system will benefit aviation, it is first necessary to understand how the present communications system works and how well it can handle future demands.

While the busy airways enjoy direct pilot-controller VHF (very high frequency) communications of good quality and high reliability, this is not the case for routes traversing sparsely populated regions.

In these areas, HF (high frequency) air to ground communications must be used, with the well-known limitations of poor intelligibility, propogation vagaries, inability to provide direct pilot-controller working and limited traffic capacity.

Heavy reliance must be made on HF and on telephone lines of indifferent reliability for communications bewteen controllers (ATC and Flight Service) and for transmission of teleprinter messages and meteorological information.

Should the satellite program not proceed, very large expenditures would be required in the VHF area to reduce current deficiencies and meet future needs.

Even so, within 10 to 15 years, no further expansion would be possible due to the fundamental limitations of this form of communications. Further growth in aviation would thereafter be retarded.

Furthermore, to retain and expand VHF communications to the extent possible would also require extremely heavy expenditures on the interconnecting microwave link system.

In fact, it is estimated the the total cost of operating, maintaining and expanding that portion of the present aeronautical communications system capable of being replaced with satellite-based facilities would be $261 million over the next 20 years.

By contrast, the satellite can provide the necessary link to permit direct VHF communications to any point in Australia at a cost quite independent of distance.

Thus, VHF outlets could be established even at extremely remote locations if required to service overflying routes, terminal areas or even for emergency or short-term needs.

Satellite terminals at manned locations will provide instant access to any location desired, with high quality and reliability for all voice and data needs.

A satellite system used in this way will allow the HF system to be held at its present level as a backup system, eliminating the high cost of expansion.

To make maximum use of the satellite system, the Department of Transport plans to install satellite ground stations at more than 200 locations by 1988. The satellite is expected to become operational in 1986.

Duplicate facilities will be installed at each location, each "half" operat-

ing through a separate satellite to ensure complete continuity of service.

In all, installations are planned at 48 manned locations and at 158 remote locations where VHF air ground outlets will also be installed.

Two transponders will be used continuously in each of the two operating satellites. Each has a total of 15 transponders, so the department's requirements account for close to one-seventh of the total capacity of the satellite system.

In summary, the satellite will bring almost universal direct VHF communications to aviation in Australia and permit similar benefits in the marine and other transport areas.

The most surprising aspect is that these otherwise unattainable benefits are achieved at less cost than the inferior alternative. The total cost of this satellites system is estimated to be $170 million over the next 20 years.

The potential saving of $90 million is even more significant to the aviation industry when cost recovery is considered.

And it does not take into account savings to the industry such as the removal of future constraints on growth due to inadequacies in communications.

CSC: 5500/7539

PRIVATE INDUSTRY MAY SUPPORT SATELLITE STATION IMPROVEMENT

Melbourne THE AGE in English 28 Apr 82 p 5

[Article by Michael Gordon]

[Text]

CANBERRA. — Private industry has offered to meet part of the $6.8 million cost of improving a receiving station owned by the Federal Government so it can have access to a new United States satellite.

Industry has told the Government that without the improvements, Australia will not benefit from resources satellites to be launched by the US, France and Japan in the next decade.

The satellites will provide information on climatic, geological and environmental change across the Australian continent. The information can be used by the mining and rural industries.

An industry group yesterday urged the Government to commit money in the next Budget to take advantage of a resource satellite to be launched by the US in July. But the group, called Indusat, told the Minister for Science and Technology, Mr Thomson, that industry was prepared to contribute to the cost "to a certain extent".

The president of Indusat, Mr Dick Walker, said last night that industry was so concerned that the upgrading take place, that it was prepared to meet part of the cost. He said Indusat would meet other organizations, including the Australian Mining Industry Council, so a firm offer could be made to the Government within a month.

The Australian station, called Landsat, was built in 1980 by the Federal Government, which paid a licence fee to the US to receive data from the American Resource Satellite Programme. Before then, Australian industry had to rely on receiving the satellite information from the US, which involved considerable delays.

The new satellite, which will operate on a different wavelength, will not be able to provide data to the Landsat station in Alice Springs without the change.

Mr Walker said the Federal Government fully supported the concept of upgrading the station near Canberra, but was concerned about the cost.

He said the new satellite had added bands which would greatly increase the amount of information on soils and other aspects of geology.

If the station was modernised it would also be able to take advantage of satellites to be launched by France in 1984 and Japan in 1987.

The case put by Indusat has been backed by an American based group called the Geosat committee, which was formed in 1976 to recommend improvements in the geological application of the Landsat programme to the US Government.

CSO: 5500/7539

PLANS FOR USE, LAUNCH OF SATELLITES TOLD

Madras THE HINDU in English 11 May 82 p 11

[Text]

MADRAS, May 10

A satellite exclusively for meteorological purposes is likely to be launched during the 90s. Talks are on between the Indian Meteorological Department and the Indian Space Research Organisation to identify the specific needs.

Dr P. K. Das, Director-General of Meteorology, told newsmen here on Monday that the "dedicated" satellite would considerably improve weather forecasting.

At present, the country does not have a satellite devoted exclusively to meteorology. The INSAT series and IRS have a segment meant for it.

The "dedicated" satellite would have better resolution — nearly one-third of the present 2.75 km. of INSAT.

The Indian National Satellite launched recently would start transmitting information on weather from mid-June. The department would set up 110 data collection platforms which would transmit data on wind, temperature, etc., to the satellite, which, in turn, would beam them to the Data Utilisation Centre in Delhi.

The Centre, would, at times of cyclones, transmit warnings directly to the areas likely to be affected. A special equipment kept in the villages would sound an alarm.

Other activities of the department included developing of a mathematical model for predicting storm surges — the sudden rise in water level when cyclones strike the coast. The Cyclone Warning Research Centre in Madras which had developed the mathematical model was one of the few centres in Asia to have done so independently.

The department had also prepared a comprehensive atlas of tracks of cyclones and depressions in the Bay of Bengal and the Arabian Sea during the last 93 years. The atlas was now being revised.

A sophisticated radar which would instantly compute the amount of rainfall over an area during cyclones would shortly be installed in Calcutta. Such a radar existed only in Madras at present.

**Meet on cyclones:** Dr. Das said a week-long international meeting on tropical cyclones would be held in the city from Tuesday. Sponsored by the World Meteorological Organisation and the United Nations Economic and Social Commission for Asia and Pacific, the meeting would consider measures to improve the cyclone warning systems for the Bay of Bengal and the Arabian Sea. The present telecommunication links, dissemination of warnings and disaster preparedness would also be discussed.

Mr. Khurshid Alam Khan, Union Minister of State for Tourism and Civil Aviation, would inaugurate the meeting.

CSO: 5500/7143

STUDY OF INSAT TELEVISION RURAL COVERAGE REPORTED

Bombay THE TIMES OF INDIA in English 9 May 82 p 9

[Text]

NEW DELHI, May 8 (UNI).

A SERIES of research and evaluation studies are under way to ensure adequate television coverage of the rural areas in the first phase of the scheme of utilising the Indian National Satellite (INSAT-1A).

Nine districts in Andhra Pradesh, Orissa and Maharashtra will be covered in the first phase of the INSAT-television programmes.

A total of 647 hours of programmes have already been identified for telecasting from the three states, including 34 hours of educational television (ETV).

The statewise breakup is as follows: 475 hours of programmes for Orissa, 82 hours for Andhra Pradesh and 90 hours for Maharashtra.

**EDUCATIONAL PROGRAMME**

The final list pertaining to the physical verification of electrified villages in Andhra Pradesh and Orissa for installing direct receiver sets (DRS) is expected to be ready by the end of this month. The supply of 800 DRS to these two states will commence next month.

The training of newly-recruited staff for these centres began at the Film and Television Institute of India, Pune, in the first week of this month. Besides, the existing staff at these centres were trained for the satellite instructional television experiment (SITE) and have attended refresher and advanced training courses in various subjects during the last seven years.

The education ministry, which is responsible for the morning educational television service, is setting up production centres at all six states where there will be INSAT-TV. Till the new centres come up, Doordarshan will produce educational programmes.

For the present academic year, the centre for educational training will produce 50 programmes of 20 minutes duration each. Subject areas and programme briefs have been prepared.

Eight programmes have already been produced and scripts in respect of other programmes are being finalised.

The evaluation studies currently on in the target areas of Orissa and Andhra Pradesh relate to physical verification of villages, preparation of audience profile, need assessment, leisure-time schedule and feed back system.

The nine districts which will receive INSAT-TV from Independence Day are: Kurnool, Hyderabad and Mehboobnagar in Andhra Pradesh, Bolangir, Sambalpur and Deenkanal in Orissa and Nagpur, Bhandara and Chandrapur in Maharashtra.

According to the programme worked out by Doordarshan, the selected districts will receive 45 minutes each of educational television in the morning.

The evening telecast will have a varied fare with a social content, besides being entertaining. This will be for one hour.

In addition, the three states will also receive for 90 minutes from 9 p.m. to 11.30 p.m. the national programme which will be telecast simultaneously all over the country under the networking project.

Time in the afternoon has been offered to the education ministry for putting out programmes for universities.

Bihar, Uttar Pradesh and Gujarat will begin receiving INSAT-TV by the end of the sixth plan. Under this scheme of taking television to the rural areas, 15 districts in six states will receive TV programmes via INSAT.

Andhra Pradesh, Orissa and Maharashtra have been selected in the first phase because infrastructure like transmitters and programme production facilities are already available in Hyderabad and Cuttack. A new transmitter is being installed in Nagpur which will be commissioned by August 15.

CSO: 5500/7140

TELEPHONE SYSTEM EXPECTED TO IMPROVE IN 2 YEARS

Calcutta THE STATESMAN in English 11 May 82 p 9

[Text]

NEW DELHI, May 10.—The telephone systems in the country, particularly in cities like Calcutta and Delhi, are likely to undergo a change for the better in the next two years.

Some of the causes that have been identified for faulty functioning of telephones are constant digging operations causing damage to telephone cables, moisture in the cable-core and delay in detecting cable faults, outmoded exchanges and defective instruments.

In pursuance of a policy-decision by the Posts and Telegraphs Department, ducts are being constructed on the important junction-routes. Ducting will make the cables immune from damage during digging by other agencies.

This is a costly operation involving Rs 13 lakhs in the construction of a 16-way one-kilometre-long duct. Calcutta Telephones have taken up the scheme for constructing 60 km of duct-route by 1983-84 of which about 20 km have already been built.

Delhi Telephones have taken up a scheme for constructing 35 km of duct by 1983-84, of which 7.5 km have already been built. Other metropolitan and major telephone districts have been asked to construct duct on important routes.

The technique of gas pressurization is being increasingly put into operation to tackle the problem of moisture in the cable-core. This also enables quick detection and repair of cable faults before a breakdown. Out of 21,000 km of cable 10,500 km have been put under pressure. It has also been decided to lay all the new junction-cables using the gas-pressurization technique.

The Sixth Plan provides for replacement of 73,000 lines of exchange equipment which have outlived their utility.

It has been found that between 30% and 40% of the complaints from subscribers refer to malfunctioning of instruments.

The concerted efforts of the Indian Telephone Industries, and the Telecommunications Research Centre have helped in developing an improved instrument christened "877". Production of these instruments has already begun, and by the end of February 32,000 such instruments have been supplied by the ITI.

Besides, the Autrax system, which enables real-time access to the traffic data, has been installed in Delhi and is proposed to be installed in Calcutta, Bombay and Madras. The integrated performance of all the exchanges, extended to Autrax systems, is made available at one point to enable corrective action to be taken.

Also, in the four metropolitan cities, in-house computers are being installed. They will help in the work of billing, analysis of complaints and faults, directory-inquiry and commercial-records.

CSO: 5500/7142

INSAT-IA FOR COMMERCIAL COMMUNICATIONS FROM 1 JUNE

Bombay THE TIMES OF INDIA in English 11 May 82 p 7

[Text]

NEW DELHI, May 10 (UNI): The commercial use of the satellite INSAT-IA for telecommunication will begin on June 1.

The Post and Telegraphs Department will start testing INSAT-IA on May 15 and complete it in a fortnight. In view of the time lost in stabilising the satellite, the department has decided to complete all the tests in the shortest time possible to avoid any further delay in commercially exploiting the satellite facilities.

According to earlier plans the testing by the P and T department would have taken a month or more.

According to Mr. M. L. Rawal, deputy director general (satellites), the local testing of all the equipment in the earth stations installed for making use of the satellite had been completed to the satisfaction of the department. If the tests with the satellite prove satisfactory, the department would start using the satellite circuits for public use from June 1.

**LOADING IN PHASES**

To avoid any further delay, testing would be conducted simultaneously from many earth stations. The earth stations in remote areas would be the first to be commissioned along with the main stations in Delhi, Calcutta and Bombay.

Mr. Rawal said the department would not load the satellite immediately to derive all the circuits. This would be done in phases. After assessing the performance of the satellite and the quality of service, the satellite would be loaded gradually. The process may take a few months.

To ensure a quick and smooth change-over to the satellite medium the operations wing of the department have been associated with the project right from the beginning, according to Mr. Rawal.

Meanwhile, the problems confronted by INSAT-IA in the initial stages are under study so that advance action could be taken to ensure smooth launching and positioning of INSAT-IB scheduled to go up next year.

CSO: 5500/7141

UNI INTERVIEWS INSAT PROJECT DIRECTOR

New Delhi PATRIOT in English 19 May 82 p 8

[Text]

BANGALORE, May 18 (UNI).

THE objective of the Indian National Satellite INSAT-IA will not be jeopardised even in the event of non-deployment of its struck solar sail.

INSAT project director P P Kale told UNI in an interview here today that if the solar sail refused to thrust out, the space scientists would encounter certain 'operational constraints' in that the satellite's hours of working might have to be cut down. 'Beyond this I think it should be able to go through its services', he said.

Mr Kale said the Indian Space Research Organisation (ISRO) was ready to operationalise the INSAT from 1 June and experimental checkout from Posts and Telegraphs ground stations had already begun. The transportable terminal at Ahmedabad had been successfully operated with the S-band transponder on board the INSAT and had received 'excellent pictures'.

Mr Kale said 'excepting for constraints in operation, we should be able to proceed with the operation of the satellite'. The situation was similar to that of the experimental communication satellite Apple, which had the problem of non-deployed solar panel in the beginning.

Asked whether the non-deployment of the solar sail would cut down the life of the satellite, he said if the sail did not get deployed more fuel would have to be spent for attitude correction and to balance the spacecraft in its geostationary orbit. In that case its life would come down by two or three years.

**IN-ORBIT SPARE**

Mr Kale said to meet such a contingency, the philosophy of having an in-orbit spare in INSAT-IB was conceived even ten years ago in the study conducted jointly by the ISRO and the Massachusetts Institute of Technology.

Mr Kale said the ISRO was not planning to advance the launching of INSAT-IB slated for early July next year. Even if the solar sail of INSAT-1A was not deployed, the overall life span of eight to nine years of the INSAT system as such including the two satellites would be maintained as planned.

CSO: 5500/7139

## BRIEFS

FRENCH OFFER ACCEPTED--NEW DELHI, May 11--India has decided to accept the French Government's offer for building a factory to manufacture electronic exchange equipment with an annual capacity of 5,00,000 lines. The factory is likely to be set up at Hosur in Tamil Nadu. The technology offered is E-10 digital electronic exchange. The Government has also accepted the French offer for expansion of the Palghat unit of Indian Telephone Industry to manufacture electronic exchange equipment from 10,000 to 150,000 a year. The Hosur factory will be managed by a new public sector company known as Hindustan Telecommunication Industries instead of by ITI, Bangalore. India will be writing to the French Government expressing its "intent to pursue" its offer. The decision to accept the French offer seems to have been hastened to forestall the increase in the interest rate by five per cent on the export credit offered by the French Government for the supply of equipment in the wake of the guidelines issued by the European Economic Community (EEC) from May 15. The Government has also decided to examine other offers received in response to the global tender for a second factory for the manufacture of the electronic exchange equipment for the same capacity of 5,00,000 lines. [Madras THE HINDU in English 12 May 82 p 1]

CSO: 5500/7144

NEWS EXCHANGE AMONG NONALIGNED MOVEMENT COUNTRIES TO BE EXPANDED

Karachi BUSINESS RECORDER in English 18 May 82 p 5

[Text] Pyongyang, May 17--The seventh meeting of the coordinating committee of the news agencies pool on non-aligned countries, which opened in Pyongyang on May 12 closed on May 14, concluding its work successfully.

The meeting held in the spirit of friendship and solidarity, understanding and cooperation exchanged the successes and experiences gained in the pool's activities and sincerely discussed practical ways and measures to improve and strengthen the pool performance and further expand cooperation and news exchange among news agencies of nonaligned countries.

The meeting marked a major milestone in inducing the news agencies of non-aligned countries to attach primary importance of the pool's news service to the problems of principles arising in the expansion and development of the non-aligned movement.

The meeting also powerfully demonstrated that the news agencies of non-aligned countries firmly unite and closely cooperate with each other under the slogan of collective self-reliance, they can further develop the work of the pool, realize the aim and idea of the non-aligned movement and make a practical contribution to preserving world peace and security.

Successfully winding up the debate, the session unanimously adopted the final report on the seventh meeting of the coordinating committee of the news agencies pool of non-aligned countries and resolutions.

The closing session adopted a letter of thanks to President Kim Il-Sung.

Kim Il Sung, President of Democratic People's Republic of Korea, has said the pool of news agencies of the non-aligned countries has substantiated its vitality through its information activities and are holding an important place in the international system as an information force representing newly emerging countries.

He was speaking at a banquet hosted in honour of the delegations of the conference of news agencies from non-aligned countries, including Pakistan.

He said information of the non-aligned countries is a powerful weapon of the struggle for expanding and developing the non-aligned movement.

The pool should end monopolization of the West in the field of information and fight to establish a new world information order, he added.

He said the pool should widely propagate the aim and ideal of the non-aligned movement and report information which can contribute to solidarity of newly emerging countries and development and expansion of the movement.

The news agencies in the pool should be helpful towards the promotion of economic and technical cooperation among the non-aligned countries.

President Kim said it is necessary for the non-aligned countries to form an undivided information network linking every national news agency to promote exchanges and cooperation in the field of information.

The non-aligned countries should actively support building news agencies with high degree of the spirit of cooperation while consolidating their own news agencies, he added. APP

CSO: 5500/5811

NINGXIA EXPANDS TV BROADCASTING NETWORK

HK200751 Yinchuan NINGXIA RIBAO in Chinese 8 May 82 p 1

[Report: "Television Develops Rapidly in Ningxia"]

[Text] The Ningxia Hui Autonomous Region has made rapid progress in developing TV broadcasting over the past few years, establishing four high and medium-power TV relay stations and 20 low-power ones. Thus a complete TV broadcasting network has almost been set up in the region. In 1981, 76.6 percent of the regional population could watch TV, an increase of 28.5 percent compared with the rate in 1978. This has greatly enriched the people's cultural life in rural and urban areas.

Before 1978, TV broadcasts could be received only in Yinchuan Municipality and Dawukou County. But since 1979, the departments concerned have taken various measures in order to expand TV broadcasting in the region. They made use of the main lines of microwave communication to improve the work of relaying the programs of the central television station from Beijing. In addition, the regional government has made a financial allocation totalling 9.3 billion yuan in this area of work. In accordance with the geographic features of the region, the Ningxia Broadcasting Administrative Bureau rationalized distribution in setting up a TV broadcasting network in the region and took good care of the funds. Finally, the Ningxia television station was successfully rebuilt and expanded in Yinchuan District and some relay stations were set up in Shizuishan, Yinnan and Guyuan prefectures. All this has increased the broadcasting power and enlarged the coverage of the TV broadcasting network. In the past, the old Ningxia television station, being poorly equipped, could not broadcast too far; and its programs could be viewed only in Yinchuan Municipality, and Yongning and Helan counties. However, having been newly equipped since 1979, the Ningxia television station can now extend its broadcasts to many parts of Pingluo, Lingwu, Qingtongxia and Taole counties. Moreover, since the Luoshan TV relay station in Yinnan Prefecture went into operation, people now can get much clearer reception in Tongxin and Zhongning counties and in many parts of Wuzhong and Yanchi counties. In recent years, the municipal and county authorities and some enterprises in the region, with a total of 500,000 yuan of funds raised by themselves, have built up 20 low-power TV relay stations for improving the TV reception in some areas. Nowadays,

from Baili gold mine in the north of the region to the high Liupanshan Mountain in the south, people can easily watch programs relayed directly from the central television station in Beijing. At the end of 1981, the Ningxia television station set up a new channel, providing more programs for TV watchers.

As a result of the expanded TV broadcasting network, TV sets are now in good demand. In the past few years, a total of more than 60,000 TV sets have been sold throughout the region. The sales volume from 1979 to 1981 was 10 times more than the total volume in the 8 years preceeding 1978. An incomplete estimate made at the end of 1981 shows that there are more than 34,000 TV sets in Yinchuan Municipality (including Yongning and Helan counties), that is to say, more than 60 percent of the families in these places have TV sets. Now people like to enjoy their leisure time by watching TV news and varieties of recreation programs. This facilitates the building of socialist civilization.

CSO: 5500/4015

## OPEN-WIRE COMMUNICATIONS LINE LINKS HANOI, SAIGON

Hanoi KHOA HOC VA DOI SONG in Vietnamese 16 Apr 82 p 3

[Article by Engineer Nguyen Trang Dung, Technical Department, Posts and Telegraph General Department: "Hanoi-Ho Chi Minh City Open-Wire Communications Line"]

[Text] After the country had been reunified, the posts and telegraph sector was required to urgently build a North-South communications network to serve in time the leadership of the party and the state, as well as the need for emotional contacts among the people. There were many plans for ensuring communications, but to satisfy the need for using the existing equipment, machinery and materials to build it within a short period of time it was impossible to select any modern expensive plans that would require importing equipment from abroad.

Therefore, the Hanoi-Ho Chi Minh City open-wire communications line project was selected and urgently carried out.

In the past, the posts and telegraph sector had built a communications network among the northern provinces with Hanoi as the center, with the greatest distance being the link with Quang Binh just over 600 kilometers. The Hanoi-Ho Chi Minh City open-wire communications line was nearly 2,000 kilometers long and the greatest project so far, consisting of a variety of open-wire lines, underground cables, river-crossing cables, communications equipment of all kinds, power sources, water sources, stations and dozens of poles 20-50 meters high bearing transmission lines across the rivers.

To transmit a large amount of telegraphic materials and daily news, we must have many communications channels. To do so we cannot build too many pairs of wires because the expenses would be too great, but instead we must use carrier, or channels-combining, equipment. Through this equipment, many pairs of telephones can operate simultaneously on the same pair of wires. With open-wires, we have used telephone carriers of 12-circuit capacity, which is the largest one, i.e., on a single pair of wires 12 pairs of telephones can be used simultaneously without interfering with one another. In addition, on one telephone communications

line, we have used telegraphic carriers capable of providing 24 simultaneous telegraphic channels. With such amounts of communications lines, we have been able to satisfy only a part of the communications need.

The use of modern communications equipment in the network requires that we resolve a series of problems having to do with ensuring uniformity in connection with type and size of wires, distances between wires and pairs of wires and between communications wires and power transmission wires. To ensure quality of wires, everything from planning to construction must be accurate, strict and in conformity with standards and technical plans and patterns.

But it is quite difficult to ensure the stability of a communications line 2,000 kilometers long. Because of greatly different weather conditions in diferent locations at the same point in time, the clarity of the voices on the line cannot be ensured if we do not use sound-amplifying equipment along it. For our norm on 1 kilometer of bimetal 3-millimeter wire, with the frequency band of the 12-circuit telephone carrier being 30-150 kHz, the attenuation is 0,0342 Nep. Thus the attenuation for 2,000 km will be 68.4 Nep; this does not take into consideration the use of other equipment on the line that will raise this rate of attenuation further. Meanwhile, from the sending to the receiving end of the carrier the maximum attenuation permitted is only 4.8 Nep. Therefore, along the entire line from Hanoi to Ho Chi Minh City we had to install nearly 30 2-way amplifier stations to maintain the level of strength at the receiving end as specified by current standards. The distance of the amplified sections could be maintained only within what was specified and not more. This fact led to some difficulties because, as the amplifier stations had to be manned, they could not be located in too remote places.

The operating requirements of communications equipment are very strict. The equipment installed in the 30 or so stations on the line from Hanoi all the way to Ho Chi Minh City must operate on the same frequency, with variations no larger than 2 Hz. Power fluctuations permitted cannot be more than $\pm$ 0.2 Nep. All of the operating requirements of modern equipment demand a high degree of uniformity of many factors. To satisfy these requirements, everything from planning, construction, assembly and installation to power supply and operational management had to be very serious, synchronized and accurate. After the construction was completed, we must always maintain all the norms that would ensure trouble-free operations of equipment during its use. To maintain telephone conversations between the two ends, Hanoi and Ho Chi Minh City, hundreds of cadres and technical workers thus have to be working around the clock near their equipment and the line, to constantly make measurement and testing and to observe every small fluctuation to make timely adjustment and to deal with any breakdown, in order to make sure the voices on the line are clear and undistorted and the telegraphic signals are accurate.

5598
CSO: 5500/5795

TEXT OF GOVERNMENT STATEMENT ON BROADCASTING POLICY

Hamilton THE ROYAL GAZETTE in English 11 May 82 p 11

[Text] Following is the full text of the statement made in the House of Assembly on Friday by the Hon. Sir John Sharpe, Minister of Home Affairs, on broadcasting policy in Bermuda.

"As the House will be aware, the approval of Government has been sought for the transfer of shares in the Capital Broadcasting Company Limited to the Bermuda Broadcasting Company Limited, on terms and conditions well publicised at the time.

Confirmation has also been requested that all broadcasting licences, including right to apply for licences, will remain in force.

The main public reaction has been one of concern — which I share — that the television news gathering and dissemination facilities will be owned by one company, and effectively operated by one management — notwithstanding the editorial independence promised for the separate channels. This concern is further aggravated by the fact that the Bermuda Press Limited owns 20% of the shares in the Bermuda Broadcasting Company. On the positive side I accept that the proposed merger offers an opportunity to improve programming in a meaningful way — the need to compete 'head-to-head' with the same type of 'popular' shows, catering to the 80% majority interests being eliminated minority interests could be catered for in a manner not possible now.

I am given to understand that although ZFB made a modest operating profit last year, and could be expected to do the same this year to compete effectively in the longer term, it is considered necessary to relocate their studios and upgrade their transmission facilities by the purchase of additional equipment — estimated in total to cost in excess of $1 million. Present shareholders are apparently unwilling to invest more, in view of the limited potential for return.

I understand also that ZFB has had recent discussions with Bermuda Communications Corporation, Cablevision, and with the St. George's Broadcasting Company. Had any of these proposals been consummated it would have had the desirable effect of preserving competition in this field.

Without a 'rescue' effort it seems likely that ZFB would decide to shut down — at least its television station — in which event a monopoly by ZBM (about which we are now concerned) would be the result. Presumably, the directors of ZFB consider the ZBM offer the best way to protect their shareholders' investment and their employees' jobs. In these circumstances it is questionable whether the Government would be acting in the public interest by 'blocking' the proposed merger.

It seems likely that the public interest might be best served by attaching (further) conditions at the time of the renewal of their licences in an effort to ensure the editorial independence of the two stations (as far as the news is concerned), to improve the quality and content of programmes, and by encouraging competition from other sources.

However, in that the proposed merger has served to reactivate the interest of other parties, Government has decided that any announcement must simultaneously — even if in some generality — deal with policy in the other areas of broadcasting. Before doing so, in consideration of this, it might be useful for the record if I set out the transmission technology employed in the various areas of broadcasting under consideration.

## AM RADIO

In North America the AM broadcasting band lies between 535 and 1605 khz with a maximum of 107 channels. Each AM channel is 10 khz wide with the centre frequency being the assigned frequency.

Each broadcast channel is divided into one of three categories, namely: clear, regional or local. The clear channels are allowed a maximum of 50,000 watts and therefore, produce a strong signal, that is heard over many miles. The regional channels are permitted a maximum power of 5,000 watts and generally serve a major city. The local channels are permitted a maximum day time power of 1,000 watts and night time

power of 250 watts. All local stations except ZFB have been allocated local channels. ZFB is on a regional frequency and therefore, are subject to interference.

It is important to note that AM operations require a significant amount of open land to accommodate their antennaes which is laid out in the ground in a so-called 'ground-mat'. This ground-mat typically requires approximately an acre of land — sometimes more. In terms of signal quality, it is recognised that AM signals are inferior to those of FM. True stereo is not possible with an AM operation.

One of the prime motivating factors in North America for the use of AM is the extended night time coverage that the signal achieves by bouncing off of the atmosphere. This extended coverage is not of substantial commercial value in Bermuda as it would only extend the coverage out to sea.

A final comment on AM is that while it has been the traditional money earner for a broadcaster, the North American experience is showing that tastes are changing and the listening public is moving away from AM and towards FM. One result of this is the development of pseudo-stereo for AM. If this trend away from AM continues, we could see a movement of commercial backing away from AM towards FM, thus strengthening the financial viability of FM and reducing the demand for AM. This is a movement that Government would support.

### FM RADIO

In comparison to AM, an FM antenna requires much less land, more frequencies are available, and as previously stated, the signal is of a superior quality and causes fewer technical complications.

## COMMERCIAL (FREE) TV

Currently all TV broadcasting utilises frequencies in the VHF (very high frequency) band and is transmitted over-the-air. The use of the VHF band limits us to channels 2-13. The number of channels could be substantially expanded by opening up the UHF bank (ultra high frequency) but we have been advised against such a course for various reasons, including the higher initial installation costs. The financial basis for operation of a commercial TV station is the sale of advertising. It is the flow of revenue from this source that makes the service 'free' to the viewer.

## SUBSCRIPTION TELEVISION (STV)

Like commercial television, in Bermuda, STV is an over-the-air service that uses the VHF band. Unlike commercial television, the station operator does not locally sell advertising space, but rather relies of viewers paying for the right to view his channel.

## CABLE BROADCASTING

While both 'free' and 'STV' broadcasting rely on over-the-air transmissions to get their signal to the viewer, a cable system is based on the dissemination of television signals from the transmitting station via cables which are either strung on poles above ground or placed in trenches underground. The more cable that is buried, the higher the costs will rise and the more difficult the maintenance and repair process will become. A further complication is that, because the signal fades as it travels down the wire it must be boosted at regular intervals. This requires a transformer be placed approximately every 1,700 feet along the line and if this is buried, a manhole access must also be provided.

A definite advantage of cable transmission is that a large number of signals can be carried on one cable. This provides not only entertainment options but also the potential for limited two-way communication, although this is typically restricted to home security applications.

I am advised that it is the usual practice when granting a cable licence to invite any interested parties to submit proposals. These are then judged against a rigorous set of technical, content and financial standards.

The selected proposal is then granted a monopoly licence usually for a period of six months to 12 months. At the end of this initial licence period, the licencee is subject to further inspection prior to a long-term operating licence being granted. Normally an alternative would be waiting in the wings.

I will not in this statement endeavour to deal with all the variety of related matters including personal radio (CB), amateur radio, ship-to-shore, air-to-ground, Cable & Wireless Limited operations, Telephone Company operations, data transmission, both within the Islands and off the Islands and censorship.

The facts of the matter are that in light of the speed and extent of technological advances and changes in this field, even countries with the most advanced technological resources are finding it difficult to keep their legislation and regulations current. It follows therefore, that the Bermuda Government will need assistance from abroad to advise in the preparation of laws and regulations required to assist in the orderly development of communications technology in Bermuda — and this help is being sought as a matter of urgency.

It is against this background that the Government has been considering present, pending and potential licences and applications.

The House will be aware that I invited the Broadcasting Commissioners and the Telecommunications Authority to comment on the proposed merger and they too, in light of this development, felt it necessary to consider the broader spect-

rum of the broadcasting field.

In the public interest and in the hope of obtaining some further useful feedback this report was made public, and I am grateful to the media for the exposure they gave it, and more particularly to The Royal Gazette for publishing it in full.

In summary, they concluded that the proposed takeover of Capital Broadcasting Company by the Bermuda Broadcasting Company should be allowed, subject to certain conditions. They further suggest that as a matter of policy, all organisations should have the right to compete freely in the broadcasting market on precisely equal terms and without unnecessary governmental impediment or restraint. They add that Government should make it clear to all aspirants in this field, or proposing to enter it, that they do so at their own risk, that in the event of failure they should not expect, and should not receive, financial aid from Government. Their point is well taken, and without wishing to inhibit the prospects of any company presently in business, or anticipating entering this field, I would think it is obvious that our small population must be a deterrent to unlimited expansion in the broadcasting field. There are only so many listeners, and so many viewers, and as the choice to them is increased, so the number of listeners or viewers per frequency or channel, as the case may be, must be diminished.

It is not only the economics of our particular situation that would seem to mitigate against the long-term success of unlimited entries into the market, it is also the rapid technical advances occurring in the broadcasting home entertainment field.

The proliferation of home video equipment is causing repercussions throughout the entertainment field. Affected is everything from local movie theatres to television (both 'free' and 'STV') and cable. The more that this equipment is available to home movie viewers the less likely people will be motivated to purchase the so-called ancillary broadcasting services.

Another very real possibility is the operational availability of direct broadcasting satellites within the next 3-5 years. The average household with a modest expenditure for equipment will then be able to link to one of the new generation of earth satellites and receive a very wide range of television programmes.

To the extent that other methods of visual transmission are successful it is likely to detract, fatally for all we know, from the profitability of local 'free' television (and possibly radio). Carried to the extreme, Bermuda could in the future have no 'free' television and no local television news.

Government would be delinquent in its responsibility to the public at large if it did not state what seems to be this obvious conclusion.

Notwithstanding Government accepts, in its consideration of applications for licences, it should ensure, insofar as it is reasonable to do so, that sufficient capital is initially guaranteed to make the business operational. It will be incumbent on the individual investors and/or financial institutions putting up the money to satisfy themselves of its subsequent viability.

In all the circumstances, therefore, Government has concluded as follows:

### Proposed 'Merger of ZBM and ZFB

That no impediments be placed in the way, but consideration be given to attaching such further conditions to their licence as may be in the public interest.

## AM RADIO

That having regard to our limited land area and the space (approximately 1 acre) required for transmissions, save in exceptional circumstances, further AM radio stations should not be permitted if they require additional land.

## FM RADIO

That, subject to compliance with legal and technical requirements no impediments be placed in the way of additional licences.

### Commercial (Free) Television

That, subject to compliance with legal, financial and technical requirements and availability of channels; favourable consideration be given to licence applications.

## SUBSCRIPTION (OVER-THE-AIR) TELEVISION

That subject to compliance with financial, legal and technical requirements, Bermuda Broadcasting Company and Bermuda Communications Corporation should be allowed to proceed.

## CABLE TELEVISION

That the present inhibition on cable television be removed and favourable consideration be given to any application which meets the financial, legal and technical requirements — some yet to be determined following further advice on this subject.

CSO: 5300/7538

TELCO ANNOUNCES PLANS FOR EXPANSION OF SERVICES

Port-of-Spain TRINIDAD GUARDIAN in English 11 May 82 p 1

[Article by Ramdath Jagessar]

[Text]

AT LEAST 5,000 new telephone lines will be given out by the Trinidad and Tobago Telephone Company (Telco) by the end of this year and several exchanges commissioned. This includes a tandem switch at the Nelson Exchange with a long term capacity for handling 50,000 new lines.

These were among the many disclosures made by top Telco management to the news media at a Press conference yesterday, when the company outlined its short term plans for satisfying the 70,000 people awaiting telephones.

Executive Director Dr. Neilson Mackay commented that Telco was not making "idle promises" but was outlining milestones for the immediate future, which the company was reasonably certain of achieving.

With the aim of increasing telephone lines from the present 46,136 to 100,000, Telco had embarked on a $180 million development programme for cutting in ten new telephone exchanges and the new tandem switch. All of them will come on stream this year.

**IMPROVEMENT**

Already the Thompson Exchange at San Fernando, with a capacity of 8,000 lines, the Couva Exchange, with a 3,000 line capacity, and Piarco Exchange, (2,000 lines) had been commissioned and were in operation.

Next to come is the 3,000-line Chaguanas Exchange, the 2,000 lines Maraval Exchange, and the 6,000 line San Juan exchange, (the last two scheduled for the third quarter this year.)

In the last three months of 1982 the 5,000 capacity Diego Martin Exchange, the 6,000 line St. Augustine Exchange, the 1,000 line Cumberbatch Exchange will come on stream.

Dr Mackay stressed that the capacity of these exchanges would not be given out as telephones right away, as telephone ducts, overhead lines and house connections had to be made over a period of time.

In addition, the key factor was the installation of the tandem switch at the Nelson Exchange at the end of the year. This served to connect various exchanges to each other and to the international direct dialling system.

He observed that with the equipment installed there had already been a 100 per cent improvement in areas serviced by the new computerised, automatic exchanges. International Direct Dialling (IDD) had jumped from 136,000 calls in the first four months of 1981 to 300,000 from January to April 1982, a significant growth.

Telco chairman Mr Fenwick De Four spoke of the company's determination to "work hard and work seriously" to restore the

company's credibility and efficiency. Observing that Telco's rates were markedly lower than those in industrialised countries, he revealed that an application for new rates would be made to the Public Utilities Commission (PUC) later this year.

## BETTER MAINTENANCE

He said that improvements in the system to date and those by the time of application to the PUC would bear out Telco's stand not to ask for higher rates until there was an improvement in telephone service.

Last year the company lost $66 million and unless a new rate is granted the 1982 loss will climb to $86 million.

Other parts of the current programme were listed by Dr. Mackay and these included a major decision to go into digital technology and to standardise equipment on the North American standards.

According to Dr. Mackay, the 'ormerly weak area of maintenance had been boosted up, so that the November 1981 backlog of 5,514 malfunctioning telephones had been cut down to 2,084 by last month, and most new problems taken care of. A special CARE unit to handle problem cases had solved 80 per cent of its allotment.

In addition a serious improvement in telex services was underway and would be apparent by June 1982; a rural telephone programme for 60-70 villages takes shape by September 1982, and a new Arima Exchange by December 1982.

A programme called Network 80, designed to link 50 major government agencies together and provide better access to the public was scheduled for September 1982, while new pay stations for the public were gradually being introduced.

Dr. Mackay asked the public to judge Telco by its achievements of these milestones on the dates quoted. Apart from these the company was reducing its work teams to smaller numbers (down to two in some cases) and aiming to achieve at least international acceptable standards of productivity per worker.

Looking at the future, he stuck his neck out and hinted that in five years Telco would be able to meet 90 per cent of the demand in urban areas for telephone services in no more than 2 weeks. General Manager, Technical Operations, Mr. Marvin Larsen, estimated the demand for telephones in the near future to be as high as 300,000.

Mr. Larsen noted that Telco was now laying its cables in underground ducts, which meant that once laid there would be no need to dig up the road to effect repairs.

CSO: 5500/7538

## WORLD TELECOMMUNICATIONS DAY CELEBRATED IN KABUL

### Inauguration Held

Kabul KABUL NEW TIMES in English 18 May 82 p 1

[Text]

KABUL, May 18 (Bakhtar).— The 14th anniversary of the World Telecommunication Day, coinciding with the 117th anniversary of the International Telecommunication Union, was marked under the slogan of "International Cooperation" by the Communications Ministry at a function in the preventive medicine department hall yesterday.

The Deputy Communications Minister for technical affairs spoke on the significance of the day.

A message from Mohammad Milli, Secretary-General of the ITU, was read by the president of the telephone and telegraph department.

The head of the ITU team in the ministry spoke on the organisation's activities and duties.

An employee and Abdul Wahab, one of the students of the Communications Training Centre, also spoke.

Representatives of the ministries, universities, officials and employees of the ministry, and the head and administrative employees of the UNDP in Kabul, attended the function.

The participants visited different parts of the Shamshad station which was thrown open to the public on the day.

### Background Reviewed

Kabul KABUL NEW TIMES in English 17 May 82 p 2

[Editorial]

[Text]

Today, May 17, is the World Telecommunication Day. This year, the 157 member-countries of the International Telecommunication Union are celebrating the occasion under the theme of International Cooperation.

Peoples and Governments, be they rich or poor, have become increasingly aware of the important role played by all categories of telecommunication. They are the basis and

prerequisite for social and economic progress in general and, by now, an essential part of the infrastructure of administration.

Today modern technology has shrunk the world and distance is no longer a major problem. Modern transport has played a vital part, but telecommunications—in the form of high-quality national and international voice circuits, telex, maritime and aeronautical radiocommunication services, data transmission, sound and television broadcasting services, international cable and satellite communication links—place peoples and individual citizens of nations in ready contact with one another and with the events and people of the world.

Recognising the fundamental importance of communications infrastructure as an essential element in the economic and social development of all countries, the United Nations General Assembly has proclaimed 1983 the World Communication Year to be observed under the theme of 'Development of communication infrastructures', and has designed the ITU the lead agency, with the responsibility for coordinating the worldwide preparations for this purpose.

The resolution, adopted by consensus on November 19, asks each member-state to undertake an in-depth review and analysis of its communications policies and to stimulate accelerated development of communications infrastructures.

The proclamation of the World Communications Year does not mean that solutions to all communications problems will be found. But, in mobilising the entire world community to the need to develop communications infrastructures, it will mark the beginning of a new era where every nation will be in a position to benefit from the services provided by equally and harmoniously developed communications infrastructures.

Even though in the not very distant past, communication was by means of smoke signals, drum beats, and carrier pigeons, it is difficult to imagine, today, a life without telecommunication facilities which provide instant contact across the oceans and lands and even beyond our little earth in the solar system.

The Government of the DRA, since the irreversible Saur Revolution entered its new phase, celebrates the 14th World Telecommunication Day at a time when a broad perspective has emerged in the sector of communications. As an important step taken towards development of communications in the country, one can note the installation and commissioning of the 'Shamshad' satellite station, which has provided the possibilities of exchange of TV programmes between Afghanistan and other countries in the world. The station has also facilitated other means of communications such as telephone, telegraph and telex and trunk calls.

To modernise the communications facilities, a new multi-storey building to house the Communications Ministry is under construction. The Telecommunications Training Centre, already established and conducted with the cooperation of the ITU and the UNDP, within the Ministry of Communications, has already rendered valuable services in training skilled cadres in the field.

Afghanistan, as a landlocked country is particularly in need of developing its telecommunications infrastructures. And, that is why, greater attention is now being given to developing and expanding the communications networks in the country. With the implementation of the plans in communications and through international cooperation, we are certain that the communications networks in the country will be further improved to ensure constant and growing contacts among the people throughout the country as well as with the peoples of the world.

## Call for Cooperation

Kabul KABUL NEW TIMES in English 18 May 82 p 1

[Message from ITU Secretary-General M. Milli]

[Text] KABUL, May 17--In a message on the occasion of the 14th World Telecommunication Day, being celebrated today, International Telecommunication Union Secretary-General M. Milli has urged world cooperation for a "more equitable distribution" of telecommunication facilities.

The message says:

"Today, 17 May 1982, the 157 member countries of the International Telecommunication Union are celebrating the 14th World Telecommunication Day under the theme of international cooperation.

"This year is indeed of special importance to the ITU since, in a few months' time, the Plenipotentiary Conference--supreme organ of the union--is to meet at Nairobi in Kenya to consider ways of improving and strengthening cooperation between member-states.

Cooperation is essential for ensuring the smooth functioning of the world telecommunication network. Actively pursued since the union's inception in 1865, it has enabled all the telecommunication systems developed over the past century to be gradually extended to the public as a whole.

"That same cooperation, further strengthened, will in future pave the way to a more equiptable distribution throughout the world of those extraordinary facilities which draw mankind together by overcoming time and distance and eliminating even psyschological barriers. If steps are taken to enscourage the development of communication infrastructures over the coming decades, international co-operation will enable us to make 1983 a genuine World Communications Year.

"1982 therefore marks a turning point in the history of the International Telecommunication Union. It will be a year of hope for the harmonious development of international telecommunications for the benfit of mankind. After all, it is not symbolic that the ITU Plenipotentiary Conference should be taking place in Africa for the first time this year?"

## ITU Program Explained

Kabul KABUL NEW TIMES in English 17 May 82 p 2

[Text] The World Telecommunication Day is celebrated on May 17 each year by the 157 member-countries of the International Telecommunication Union (ITU). This date marks the anniversary of the signing of the first International Telegraph convention in Paris in 1865. The theme chosen for the 14th World Telecommunication Day is "Telecommunications and [illegible]

national cooperation".

There can be no international telecommunications without international agreement on a considerable number of points: the frequencies to be used in radio, the switching criteria on international telegraph and telephone links and the modes of operation. There must also be an understanding on the methods of charging the users of international telecommunication services and on fixing of rates and sharing of revenue among the telecommunication authorities of different countries.

Therefore, the International Telecommunication Union has served for 117 years as a medium through which its Member countries co-operate in the development of telecommunications. Its work in the fields of international regulations, planning, coordination and standardization are the very basis of this continuous cooperation for the benefit of the world's social and economic development.

A key activity in the International Telecommunication Union's multifaceted responsibility for international telecommunications is the standardizing and planning work of the Union's two International Consultative Committees—the International Radio Consultative Committee (CCIR) and the International Telegraph and Telephone Consultative Committee (CCITT).

The standard-setting work of these two bodies ranges over the whole field of telecommunications including such diverse branches as measuring equipment, telephone signalling systems, terminal equipment and interfaces for data transmission, facsimile terminals, protection of frequencies used for radio astronomical measurements, standard frequencies and time signals.

Computer programmes developed in the ITU are used to analyze the statistics and to develop a dynamic model of the optimum network for the future, taking into account growth in traffic demand, financial possibilities and advances in technology.

Another achievement of the ITU, the results of which are of direct benefit to millions of people every day, is the world telephone numbering plan. Under this plan every telephone subscriber connected to the international automatic network has a unique telephone number composed of a country code, an area (or trunk) code and finally his local telephone number.

By dialling the international access code followed by the unique "World telephone number", the subscriber may be called from any other telephone in the world connected to the international automatic network. It is estimated at present that there are 180 million main telephone stations throughout the world with this facility but the number is increasing very rapidly.

The ITU has also compiled a series of handbook on rural telecommunication networks, the economic and technical aspects of the choice of switching systems, the choice of transmission systems and transmission planning in switched network. Within the field of radiocommunications the ITU has been equally active.

During the last years the ITU study groups have developed:

—Worldwide standards for digital television studio equipment.

—A series of standards for maritime communications.

The ITU has made studies on:

—The use of satellites for broadcasting and other communication services.

—Radiotransmission and frequency sharing questions in the radio-frequency spectrum.

Thus, the ITU has an important influence on administrations and operating agencies, manufacturers and designers of equipment and telecommunication scientists and technicians throughout the world.

Without the International cooperation in the field of telecommunications would not have been so fruitful and effective.

Telecommunications Training Center Operating

Kabul KABUL NEW TIMES in English 17 May 82 p 3

[Excerpts] Realising the need for uniformity in the techniques used for telecommunications to overcome artificial barriers of different countries, the nations of the world formed an international body known as the International Telecommunication Union (ITU). At present, 157 countries are its members. Any new advance in telecommunication technology or techniques is presented to this august body.

## ITU SUCCESS

Representative of all countries and reputed manufacturers sit and discuss the new development. They recommend its acceptance, modification or rejection, keeping of the sole aim of better, faster and cheaper international telecommunication in their minds. The ITU though only a consultative body, has succeeded in bringing a consensus in all its decisions which are accepted by the member-nations voluntarily for their international network.

Since the national network of any country is part of the international link, the decisions often regulate the design of the internal network. The committees which examine proposals are called CCITT and CCIR. One deals with all telecommunication matters other than radio and the other deals with matters in the radio communication field. Problems encountered by different administrations in the telecommunication field are also referred to these committees. These committees undertake investigation of the problems through cooperating agencies and provide solutions.

## TRAINING CENTRES

The ITU runs Telecommunication Training Centres (TTCs) in several states of Africa and Asia. A training centre functions in Afghanistan also. The TTC in Kabul is the only one of its kind in the whole of Afghanistan. It provides vocational and technical training at the technician's and technical officers' level in various fields of telecommunications such as telephony, telegraphy, telex, carrier technology, micro-wave technology, outside plants like cables, and the specialised power plant needed for these.

Students who complete the ninth grade in schools successfully are admitted for a three-years course in "telecommunication basics" for technicians. They are trained in the Basics of sciences and technology needed for the proper upkeep of telecommuncation assets in the PTT. The emphasis is on the trainees to attain a minimum standard acceptable by the PTT for good performance. Most of the students, after

they complete the course are absorbed by the PTT to work in its installations.

The TTC provides training for the job of technical officers also. Students who come out of the 12th grade from the university and some of the bright students from those who successfully complete the technician training from the TCC are selected for specialised courses in various branches of telecommunication for two years. The ITU provides international staff, who are specialists in their fields.

These staff design courses, as per international standards, prepare course materials and train their national counterparts in these fields. The trained national staff will be utilised to produce new courses in future, as need arises. They also train the technician and technical officer trainees.

The ITU has provided the TTC with a good library and modern equipment in all fields for practical training. Modern documentations facilities are available and cover all aspects like duplicating, stencilling, transparency preparation, offset plate production and offset printing. Modern training aids like overhead projector, 8 mm film projectors, and audiovisual equipment are used in training the students.

The ITU with its objective of helping underdeveloped nations to achieve rapid advance in telecommunication, provides assistance to telecommunication administrations in planning their network. They also make available international staff to test and evaluate any system introduced in the country before it is commissioned.

The assistance of the ITU does not end here. It assists in providing scholarship or fellowship to deserving students from the developing nations. These students are sent to various advanced countries for training in different aspects of telecommunications like transmission, switching, radio, frequency regulation and microwaves systems. The funds for this activity also is usually from the UNDP, funnelled through the ITU

## NEW LINKS

In the social and commercial fields, there is always a demand for exchange of more and still more spoken and written words across the seas. To facilitate this, the communication links have to traverse several countries. Failure in telecommunication services in today's context cannot be tolerated. Hence back-up routes are required to provide alternate media for continued services when any link breaks down.

International cooperation is vital in this area. Trans-Atlantic submarine cables are examples of this international cooperation. A new scheme linking East Asia to the West via Hongkong, Singapore, India, Pakistan, and Afghanistan is under execution. A tropo-scatter microwave link spans the distance between India and the USSR now. Several such links exist already between different states in Europe.

All these are possible only due to international understanding and cooperation with the aim of providing newer and improved telecommunication to mankind

CSO: 5500/5340

## BRIEFS

TELECOMMUNICATIONS AGREEMENTS SIGNED--Two agreements on telecommunications were signed today in the office of the post, telegraph and telephone minister. The first agreement was signed with (Funun and Tgbahyan) Company to provide the telecommunication corporation with services and equipment in order to expand means of communication. The U.S. (Harris) Company will provide the project with technical equipment worth 432,285 Omani riyals. According to the second agreement, which is signed with the Mustafa and Jawad Company, the corporation will be provided with 650 English telex machines in addition to 350 Arabic-English telex machines. The (OKI) Japanese company will manufacture these machines, which are worth 785,550 Omani riyals. [GF131430 Muscat Domestic Service in Arabic 1300 GMT 13 May 82]

CSO: 5500/4722

SARCASTIC COMMENTS ON LONG-DISTANCE TELEPHONE SERVICE

Luanda JORNAL DE ANGOLA in Portuguese 1 May 82 p 2

[Article by Joao Serra in "The Record" column: "International Connections"]

[Text] I get up early enough and my disposition has not yet suffered the reverses of an entire day of frustrations. So I want to profit from all this serenity by making a telephone call to Lisbon, a struggle which frequently leaves me defeated.

It's 7:30 a.m.

That's a decent hour.

Big businesses have certainly not yet begun to ask for overseas telephone connections. The majority of other subscribers prefer nighttime. Surely I won't have difficulty getting a quick connection.

I pick up my telephone receiver with the greatest serenity and dial, in my usual calm, the digits of that fantastic number whereby one asks for international connections: 109.

From the other end:

"Beepbeep-beep... beepbeep-beep... beepbeep-beep..."

It was busy.

Somebody did get up before me, but surely it won't take long to put his call through. So I try again several minutes later.

From the other end:

"Beepbeep-beep... beepbeep-beep... beepbeep-beep..."

Still busy. I try several more times. Nothing. A certain nervousness begins to come over me, but I soon discover that my impatience may be caused by an empty stomach.

I take a break. I go into the kitchen and have a quick drink which very quickly restores my serenity, so then I go back to dialing that all-important 109.

From the other end there now comes no busy signal. Now nobody answers. I decide to wait it out as the sound from the receiver over and over again is:

"Ring-ring... ring-ring... ring-ring..."

I want to hit the telephone.

I bite my lips in impatience.

Once, twice, three, four, ten times I dial this obnoxious telephone number. But suddenly I seem to discover why nobody answers on the other end of the line. I've already had a drink. The telephone operator also has a right to be absent for a little while to do the same. Or else she has gone to the bathroom....

I take another break.

I light another cigarette.

I have another coffee to quiet my nerves.

In other words, I wait.

Now it's almost 9:30 already. I lift the receiver and let's see whether I have more luck this time.

Nothing. Now it's busy again.

I lose my calm since a man is not made of iron. I change tactics. This time I'm going to make the connection via 105.

It takes time but there is an answer. It's my first victory of the day. From the other end a feminine voice tells me hurriedly to stay calm and persist because today there are many calls to place.

I look once more at my watch. Today I'm going to get to the office at some beautiful hour. But I have to make this call....

A little after 10:00 I find that the lady at 105 was right. Number 109 finally answers. I don't know whether the profound sigh of relief which inadvertently escaped me was heard at the other end of the line, but if so no notice was taken of it.

A voice, calm and noticeably hardened in daily battles of putting through connections or refusing to do so, was then saying to me:

"Calls to Portugal only after 4:00 p.m. Today we have a large number of calls to place."

I feel myself once more losing my cool.

I'll overdo it no doubt on coffee.

There would be no reason for the telephone operator to lie to me. But I make one last try. I try to play on the humanitarian sentiments of the operator:

"But comrade, I do have a great urgency to get this call through and anyway I surely will not find my party at home after noontime. Couldn't you please manage it now?"

But the operator is fed up with my sweet talk. It's no doubt been a long time since she permitted herself to be influenced by it.

She tells me it's impossible.

She begs my pardon.

Ciao.

She's right; I'm the one who's lucky.

But tomorrow I'm going to start telephoning right after 5:00 a.m. and not quit dialing until I get my call through, even if I end up with no skin on the end of my index finger.

9972
CSO: 5500/5803

UIGE MICROWAVE TELEPHONE SYSTEM

Luanda JORNAL DE ANGOLA 12 May 82 p 1

[Text] Uige--The work of installing a microwave telephone system, begun last year in the city of Uige, may be concluded in July of the current year, Deputy Minister of Communications Licinio Ribeiro recently told ANGOP [Angolan Press Agency].

Licinio Ribeiro, who since last Wednesday has made working visits to various provinces of the country--namely, Bengo, Kwanza-Norte, Malanje, and Uige--emphasized that this new telephone system will serve 3,000 subscribers in this province and will make possible direct connections with other provinces already in possession of the same system.

The deputy minister further revealed that the microwave system is to be operated in the shape of a star in Kwanza-Norte, Malanje, and Uige provinces with Kwanza-Norte serving as the coordinating point. The spokesman added, "It is a system which requires intermediate stations to serve as bridges from the provinces into the telephone headquarters in Luanda."

The microwave telephone system is to be installed in Angola by the Portuguese firm CENTREL while the cross-horizon system is of Japanese make. Besides visiting these telephone projects, Licinio Ribeiro is also engaged in a current survey of weather stations and civil aviation.

In Uige Province, the deputy minister also visited the microwave station at Negage, accompanied by four Angolan experts and two Portuguese cooperants.

9972
CSO: 5500/5803

## BRIEFS

RADIO EXPANSION PLANS--Radio reception in Taita Taveta District will be improved when the 26 million shillings VOK mediumwave transmitter station at Voi is operational. An assistant minister for information and broadcasting, Mr Khasakhala, stated this when he toured the station. Mr Khasakhala said that the government was improving radio and television reception throughout the country. [Excerpt] [Nairobi Domestic Service in English 1400 GMT 20 May 82]

CSO: 5500/5818

DATA ON NATION'S SATELLITE TELECOMMUNICATIONS NETWORK

Paris EUROPE OUTREMER in French No 624, Jan 82 pp 51,52

[Text] Since the end of 1981, Niger has had one of Africa's largest satellite telecommunications networks. Built jointly by Thomson-CSF and TELSPACE [expansion unknown], this new network is designed to disenclave poorly served zones and improve international telecommunications service. This network has been installed under a multiphase project decided by the OPT [Postal and Telecommunications Office], the overall cost of which will be 25 billion CFA [African Financial Community (monetary Unit)].

Prior to 1980, Niger had begun to develop its telecommunications network by way of a microwave link in the southern part of the country, about 1,000 km long, interconnecting Niamey, Dosso, Birni, Nkonni, Maradi and Zinder. The vast expanse to be covered (Niger has an area of 1,267,000 $km^2$), the absence of relief, except for the Air mountain mass and a few peaks over 2,000 m high, and the low population density justified the choice of satellite telecommunications. In just a few months following the signature of the contract in 1980, Thomson-CSF completed and delivered on a turnkey basis a fully integrated network designated the PMETT [Combined Telephone and Television Expansion Project] and comprising:

--A large-size earth station (antenna diameter 32.5 m) installed at Karma, 32 km from Niamey, and oriented on the Intelsat satellite over the Atlantic Ocean;

--Three medium-size earth stations (antenna diameters 11.80 m) installed at Karma, Agadez and Diffa (a fourth station will be installed eventually at Bilma);

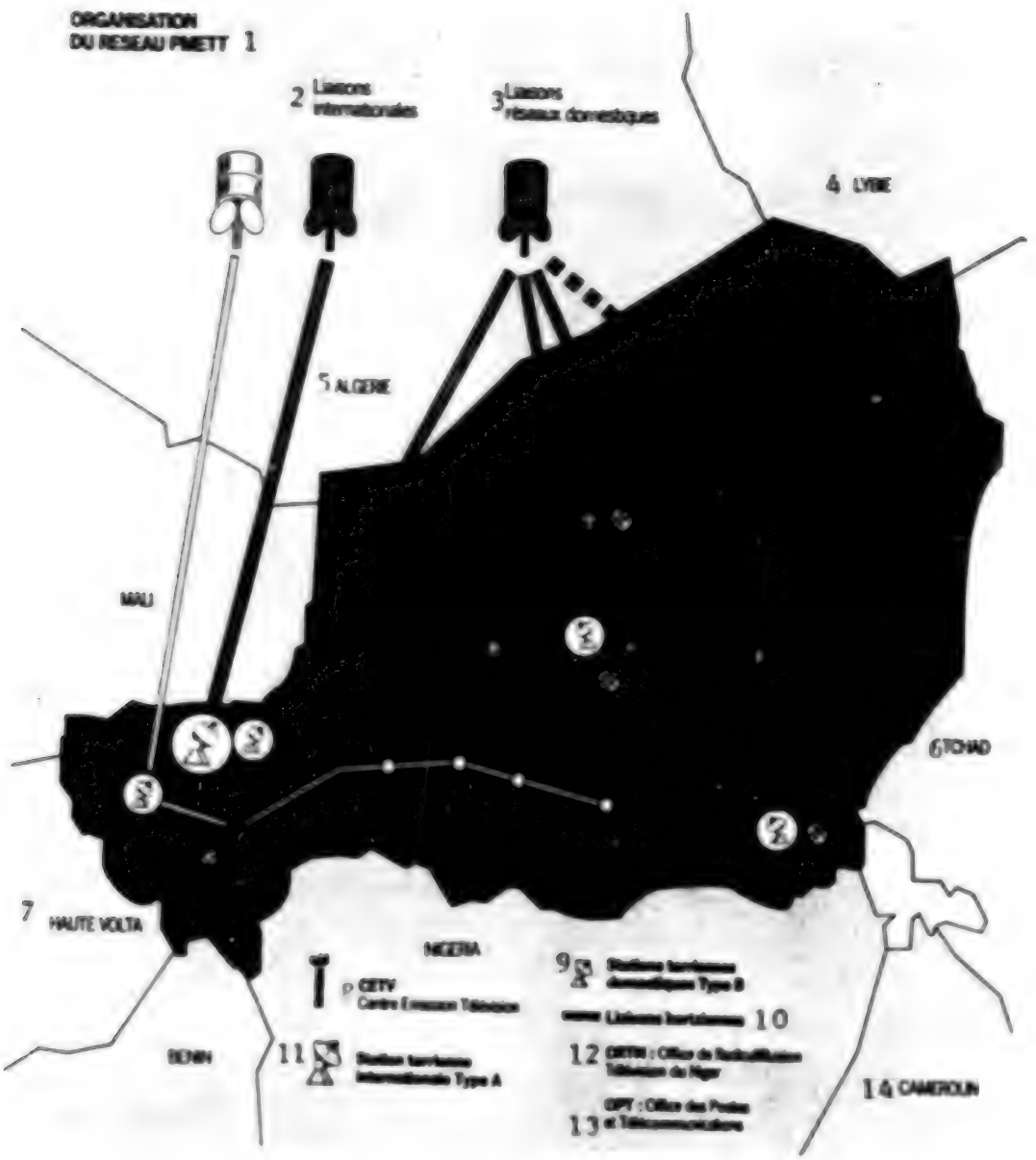
--A 275-km microwave link between Agadez and Arlit with lateral branches designed to serve several mining companies;

--Telephone exchanges at Arlit and Diffa, and urban network extensions;

--Three television transmitters at Agadez, Arlit and Diffa, as well as a TV relay station at Ingall;

--An electric power generating station at Diffa;

--Lastly, technical operations buildings, power stations and living quarters for operating personnel.




Key:

1. Organization of the PMETT Network.
2. International links.
3. Domestic links and networks.
4. Libya.
5. Algeria.
6. Chad.
7. Upper Volta.
8. CETV [TV Transmission Center]
9. Type B domestic earth stations.
10. Microwave links.
11. Type A international earth station.
12. ORTN [Niger Radio and Television Broadcasting Office].
13. OPT [Postal and Telecommunications Office].
14. Cameroon.

The international satellite earth station at Karma. It will provide telephone and television links throughout Nigeria and with the entire world.

Long waits to talk to Paris are now a thing of the past; everything is automatic. Abidjan, which is still on semiautomatic, will be automated by April 1982, when the international switching exchange now being installed will be put into service. Thanks to the PMETT, Niger's domestic links have been extended and improved. There are: Between Niamey and Diffa 17 telephone circuits and a 10-channel telegraph bearer; between Niamey and Agadez 52 telephone circuits and 46 telegraph channels; between Agadez and Arlit 52 telephone circuits and 18 telegraph channels; between Arlit and Mandaouela 23 telephone circuits and one telegraph channel; and Arlit, El Maki and Timia are linked by a radiotelephone system.

In the television sector, the PMETT, by way of the Karma earth station equipment, will facilitate the transmission and reception of a televised program emanating from any country in Europe, West Africa or America. Domestically, it will enable the transmission of one TV program (video + sound) and two radio broadcast channels between Niamey, Diffa and Agadez.

A Second Modernization Phase

The OPT has also undertaken the installation of a 720-line telex exchange, expandable to 1,200 lines, which is scheduled to be operational by 15 December 1981, at Niamey. ""Our hope," remarked the director general of OPT, Mr Maiguizo Naino, in this regard, "is to see this exchange saturated within the next 3 years. Telex growth in a country is a priceless indicator for analyzing that country's economic evolution." Rural telephone service has also made its appearance. Public telephone booths have been installed in the large villages on the highways along which carrier current facilities are routed (Bonkoukou, Damana, Tabala, Kore Mairoua, Badiguichiri, Tamaske, Galmi, Dogaraoua, etc). To serve its urban subscribers, the OPT has undertaken the expansion of its Tahoua exchange to 400 lines, its Maradi and Zinder exchanges to 800 lines, and its Niamey B exchange from 2,000 to 4,000 lines.

For the second phase of its modernization program, the Nigerien telecommunications system plans to install an earth station at Bilma, microwave links between Bilma and Dirkou, Diffa and N'Guigmi, Tahoua and Koni, Tahoua and Tchintabaraden, and Niamey and Filingue. Cities like Konni, Doutchi, Tessaoua, Goure, Maine and N'Guimi will have automatic telephone exchanges, subscriber networks and interurban networks. Television transmitters will be installed at Dosso, Maradi, Diffa and Agadez, as well as 3-kw, FM transmitters for radio broadcast. In this phase, 10-kw TV transmitters and FM tramsmitters will be installed at Filingue, Tahoua and Goure. These second-phase projects will cost 14 billion CFA, which are to be provided jointly by Niger, the FAC [Aid and Cooperation Fund] and the CCCE [Central Fund for Economic Cooperation]. The FAC has already agreed to a first installment of 900 million CFA.

To these networks, existing and to be constructed, will be added the PANAFTEL [expansion unknown] microwave network, for which Thomson-CSF has just provided a switching exchange to handle national and international trunks. The Niamey-Cotonu network and the Niamey-Ouagadougou one was to be put into service by the beginning of 1982. These two projects owe their actualization to a gift from

the Canadian government. The Niamey-Lagos link via Maradi-Katsina will soon enter its actualization phase. Niger will provide over 393 million CFA for this project.

Lastly, there are the Liptako Gourma and the CDEAO [Economic Community of West African States] projects. The first of these organizations, of which Mali, Niger and Upper Volta are members, will link Niamey-Say-Tamou-Tapoa, Niamey-Tera-Dori (Upper Volta), and Niamey-Tillabery-Ayerou-Gao (Mali) by way of telephone facilities and exchanges of television and radio broadcasts, at an overall cost of 1,228 million CFA to be provided by the ADB [African Development Bank]. The second plans to link Sokoto (Nigeria) and Konni, with financing to be provided by the CDEAO. Noteworthy also is the development of rural telecommunications by way of the projects linking Tera-Nankilare, Niamey-Kollo, Niamey-Koure, Niamey-Namaro, Niamey-Boubon, Birni-N'Gaoure-N'Gourti, and Bilma-Fachi. Actualization of this second phase by the OPT together with the ORTN [Niger Radio and Television Broadcasting Office] will provide telecommunications coverage of a large portion of the country. The PEMTT is a new element contributing to the strengthening of the country's unity.

9399
CSO: 5500/5796

## BRIEFS

GROUND SATELLITE STATION INSTALLED--A vital ground satellite station capable of obtaining distant pictures of rain clouds has been installed at the National Meteorological Analysis Centre at the Dar es Salaam International Airport. The Director-General of Meteorological Department, Ndugu Urban Lifiga, told Shihata in Dar es Salaam yesterday that the satellite, which began operating last Tuesday, has been provided free of charge by the Federal Republic of Germany through the World Meteorological Organisation (WMO). He said the Directorate's work would now be considerably enhanced because the facility could obtain satellite cloud pictures from far out in the Indian Ocean. "It covers the whole of Africa, a portion of South America, Europe and the Southern Oceans," he said, adding that detailed cloud pictures over Tanzania could be obtained as well. Ndugu Lifiga said the installation of the equipment was an achievement for his department, because the department could now easily locate areas of rainfall, clouds and tropical cyclones. [Excerpt] [Dar es Salaam DAILY NEWS in English 11 May 82 p 1]

CSO: 5500/5814

PTC COULD SAVE FUEL ON MICROWAVE LINK IF SOLAR ENERGY TEST SUCCESSFUL

Lusaka TIMES OF ZAMBIA in English 18 May 82 p 5

[Text] THE Posts and Telecommunications Corporation could save about 3,400 litres of diesel or K1,972 a month on its Chipata microwave link if the field experiment on solar energy launched yesterday proves successful.

PTC director-general Mr Philemon Ng'oma and his director for telecommunications Mr Swatulani Munthali said this during the launching of the experiment at Chitemalesa microwave station, 80 km from Lusaka on the Great East Road.

The experiment, which is of the hybrid solar system, is being carried out at the Chitemalesa microwave repeater station as a joint project by the PTC and the Nippon Electric Company of Japan.

The experimental equipment has been brought into Zambia and installed at the station free of charge by the Japanese company.

Mr Ng'oma said if the equipment proved successful, PTC would buy it for that station and eventually buy more others for the other stations on the link.

He could not say how much the corporation would pay for the equipment. The issue of cost would be discussed at a later date.

Mr Munthali said the success of the experiment would be a major breakthrough for the corporation as it would mean a "drastic" cut on the running costs of repeater stations on the Chipata microwave link.

Another advantage of the solar system was that it was capable of producing six times more than the required power for each station.

"Apart from producing six times more power than needed, the system is also capable of storing some excess energy for the night when there is no sun-shine."

The station which acts as a booster for signals from Lusaka to Chipata, now runs on a diesel engine for 24 hours, but the engine would only be required for three hours with the solar system in operation.

"And for the diesel engine to run at that rate to provide the required power, we spend 250 litres per month. But with the solar system in operation, this will be cut to only 50 litres per month. And it should be borne in mind that there are 17 stations on this (Chipata) link," Mr Munthali said.

The corporation had planned to have all existing repeater stations converted, leading to conservation of more litres of diesel.

Giving the outline of the experiment, Mr Munthali said while the Japanese company had provided the equipment, the work of monitoring the performance of the just installed solar cell would be done by PTC.

CSO: 5500/5812

## BRIEFS

UNDERWATER CABLE INAUGURATED--Communications Minister Khr. Mavrellis inaugurated yesterday afternoon from his office the new underwater cable "Apollon" for telecommunications between Greece and Cyprus. The new cable, which is the second of its kind, has a capacity for 1,380 channels. The minister spoke on the telephone with Greek deputy Minister of Communications S. Valyrakis. He said that the inauguration of the cable constitutes still another tie between Greece and Cyprus and expressed the hope that a solution will soon be found for the Cyprus problem. [Excerpt] [Nicosia KHARAVGI in Greek 29 Apr 82 p 7]

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